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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,239	03/16/2001	Kenneth Hsu	069116.0159	8261

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BAKER BOTTS L.L.P.  
2001 ROSS AVENUE  
SUITE 600  
DALLAS, TX 75201-2980

EXAMINER
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PROCTOR, JASON SCOTT

ART UNIT	PAPER NUMBER
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2123

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/14/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/14/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

glenda.orrantia@hotmail.com  
mike.furr@bakerbotts.com  
ptomail1@bakerbotts.com

**Office Action Summary**

Application No.

09/811,239

Applicant(s)

HSU ET AL.

Examiner

Jason Proctor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 February 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION


1. In view of the request for pre-appeal conference filed on 16 February 2007, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

  
PAUL RODRIGUEZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

Claims 1-24 are pending in this application.

Claims 1-24 are rejected.

***Claim Rejections - 35 USC § 102***

In response to the previous rejections of claims 1 and 13 under 35 U.S.C. § 102 as being anticipated by US Patent No. 6,408,001 to Chuah et al., Applicants argue primarily that:

The Chuah, et al. patent fails to disclose any time division multiplexed data stream or an ability to divide the time division multiplexed data stream into fixed sized packets as required by the claimed invention.

These arguments have been fully considered and have been found persuasive regarding the “time division multiplexed data stream”. New grounds of rejection under 35 U.S.C. § 103 are entered below.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. § 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. § 102(e), (f) or (g) prior art under 35 U.S.C. § 103(a).

2. Claims 1 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 6,408,001 to Chuah et al. (hereafter referred to as Chuah) in view of "Implementing Voice Over Internet Protocol" by Altera Corporation (hereafter referred to as Altera).

Regarding claim 1, Chuah teaches:

A method for circuit emulation over a multi-packet label switching (MPLS) network, comprising:

Receiving a data at an ingress end [*"Although the present invention is illustrated and described herein as an embodiment utilized for Internet telephony transport, the embodiment is merely illustrative and should not be construed as being so limited. The present invention is equally applicable for any packet type, whether voice, data, or multimedia, which is switched from a source address to a destination address lo using an appended label."* (column 4, lines 18-24)];

Dividing said data stream into a set of fixed sized packets [*"A plurality of variant schemes may be utilized, but for the purposes of analysis, assume that voice packets for each call are encoded into ten byte packets and that a unique three byte header is appended to each voice packet to identify the voice connection."* (column 6, lines 51-60)];

Adding a service header to each of said packets [*“ITS-4 creates an IP-inIP tunnel packet 520 by encapsulating the IP packet 510 with an ITS-1 DIP 522 and an ITS-4 SIP 524. ITS-4 then routes packet 520 to LSR-4.”* (column 7, lines 47-50)];

Adding an additional header on top of said service header in accordance with MPLS protocols [*“LSR-4 appends MPLS label 1 532 to create labeled IP packet 530... LSR-7 removes MPLS label 1 532 and appends MPLS label 2 542 to create labeled packet 540.”* (column 6, lines 50-55)];

Removing said additional header after each packet has been processed by said MPLS network [*“LSR-1 removes MPLS label 2 542 and routes packet 520 to ITS-1.”* (column 6, lines 58-59)]; and

Using said service header to recover said data stream at an egress end [*“ITS-1 removes the ITS-1 DIP 522 and ITS-4 SIP 524 to recreate the original IP packet 510 and routes IP packet 510 to D-1.”* (column 6, lines 59-61)].

Chuah does not expressly teach that the data stream at an ingress end is a time division multiplex data stream.

Altera teaches a voice over ip (VOIP) network system wherein a time division multiplex data stream arrives at an ingress end [*“The TDM bus carries unpackitized voice data between all cards in the system.”* (page 5, first paragraph); Figure 2 depicting “plain old telephone system” equipment interfacing with a “digital access card” via a time division multiplex (TDM) bus (page 4)]; and dividing said data stream into a set of fixed sized packets [Figure 1 (page 2)].

Altera and Chuah are analogous art because both are drawn to internet telephony systems.

It would have been obvious to a person of ordinary skill in the art to combine the teachings of Altera and Chuah by using the Altera system to interface “plain old telephone system” equipment with the system taught by Chuah, especially where Chuah discloses the “internet telephony servers” (ITS) in FIG. 4 and related disclosure. Additionally, Altera expressly provides motivation to combine the teachings of the references, such as to save costs [*“As networks get larger and maintenance costs continue to rise, a VOIP network for voice communication becomes more attractive.”* (page 13, first paragraph)].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of Applicants’ invention to combine the teachings of Altera and Chuah to arrive at the invention specified in claim 1.

Regarding claim 13, which recites the limitations of claim 1 as a “computer program product,” Chuah teaches that the invention described above may take the form of a computer program product [*“software in any form, including, therefore, firmware, microcode or the like, combined with appropriate circuitry for executing that software to perform the function”* (column 18, lines 5-7)].

3. Claims 2-12 and 14-24 rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah in view of Altera as applied to claims 1 and 13 above, and further in view of “MPLS: The Magic Behind the Myths” by Grenville Armitage (hereafter referred to as Armitage; cited previously and made of record on PTO-892 dated 30 December 2005).

Regarding claims 2 and 14, Chuah in view of Altera teaches the limitations of claims 1 and 13.

Chuah in view of Altera does not expressly teach the recited steps of monitoring the data stream and attaching an alarm bit.

Armitage teaches monitoring said data stream and attaching an alarm bit in a service header of a subsequent packet if a break in said data stream is detected (pg. 127, "Label-Based Forwarding" section, paragraphs 3 and 4, regarding the "S" bit).

Armitage and Chuah in view of Altera are analogous art because they are both from the same field of endeavor, that of MPLS networks.

Therefore, at the time of Applicants' invention, it would have been obvious to a person of ordinary skill in the art to implement the MPLS routing features described by Armitage in the MPLS network described by Chuah. The motivation for doing so would have been to fully realize the advantages of MPLS networks taught by Armitage [*"It is shown that MPLS adds the ability to forward packets over arbitrary non-shortest paths, and emulate high-speed "tunnels" between IP-only domains – capabilities critical to service providers who need to better manage resources around their backbones, or who are planning IP VPN services."* (Armitage, abstract)].

Therefore, it would have been obvious to combine Armitage with Chuah in view of Altera to obtain the invention as specified in claim 2.

Claim 14 is rejected for similar rationale in the context of a "computer program product" as set forth in the rejection of claim 13.



Regarding claims 3 and 15, Chuah in view of Altera teaches the limitations of claims 1 and 13.

Chuah in view of Altera does not expressly teach the recited step of using a structure pointer.

Armitage teaches the step of using a structure pointer in said service header to indicate whether a header byte a synchronous payload envelope is present within a packet, said structure pointer indicating the location of said header byte in said packet (pg. 127, "Label-Based Forwarding" section, paragraph 4 "SONET/SDH").

The rationale for combining these references has been given above.

Claim 15 is rejected for similar rationale in the context of a "computer program product" as set forth in the rejection of claim 13.

Regarding claims 4 and 16, Armitage further teaches the step of: reserving a pointer value indicating that said header byte is not present within said packet (pg. 128, left column, 4th paragraph, lines 5-9).

Claim 16 is rejected for similar rationale in the context of a "computer program product" as set forth in the rejection of claim 13.

Regarding claims 5 and 17, Chuah in view of Altera teaches the limitations of claims 1 and 13.

Chuah in view of Altera teaches does not expressly teach the recited step of recording a stuffing time difference and implement said stuffing time difference.

Armitage teaches the steps of recording a stuffing time difference in a service header at said ingress end (pg. 127, left column, "Label-Based Forwarding" section, 3rd paragraph); and implementing said stuffing time difference at said egress end (pg. 127, left column, "Label-Based Forwarding" section, 3<sup>rd</sup> paragraph).

The rationale for combining these references has been given above.

Claim 17 is rejected for similar rationale in the context of a "computer program product" as set forth in the rejection of claim 13.

Regarding claim 6, Chuah in view of Altera teaches the limitations of claim 1.

Chuah in view of Altera does not expressly teach the steps explicitly recited by claim 6.

Armitage teaches the steps (a) storing a first set of frames into a data buffer; (b) calculating a first data average of said first set of frames in said data buffer to obtain threshold value (pg. 125, right column, 5th paragraph, "provisioning"); storing a next set of frames into said data buffer; (c) calculating a next data average of said next set of frames in said data buffer; (d) comparing said next data average to said threshold (pg. 125, right column, 5th paragraph, "provisioning") value; (e) said next data average is greater than said threshold value: generating a negative justification indicator (pg. 127, "Label-Based Forwarding" section, 2nd paragraph, "TTL reaches 0 "); and sending one more byte at said egress end (pg. 128, right column, "egress from the LSP tunnel, the top-level label is popped and the LSR then switches the remaining MPLS frame based on the new top label"); (f) if said next data average is less than said threshold value: generating a positive justification indicator (pg. 127, "Label-Based Forwarding" section, 2nd paragraph, "the TTL is set to a finite value at the beginning of the LSP, decremented by on

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at every label switch”); and sending one less byte at said egress end; and (h) repeating said steps (c)-(g) (rejected based continuation, see *In re Dilnot*, 319 F.2d 188, 138 USPQ 248 (CCPA 1963)).

The rationale for combining these references has been given above.

Regarding claims 7 and 19, Chuah in view of Altera teaches the limitations of claims 1 and 13.

Chuah in view of Altera does not expressly teach the steps explicitly recited by claim 7.

Armitage teaches the steps of: checking a sequence counter in said service header of each packet in said set of packets (pg.129, left column, 1st paragraph); locating at least one header byte in said set of packets (integral to loading the various components to the frame; pg.127, “Label-Based Forwarding” section, 1<sup>st</sup> and 2<sup>nd</sup> paragraphs); measuring all bytes between two header bytes (integral to loading the various components to the frame; pg.127, “Label-Based Forwarding” section, 1<sup>st</sup> and 2<sup>nd</sup> paragraphs); and pushing said set of packets into a frame (pg. 128, 4<sup>th</sup> paragraph, line 7).

The rationale for combining these references has been given above.

Claim 19 is rejected for similar rationale in the context of a “computer program product” as set forth in the rejection of claim 13.

Regarding claims 8 and 20, Chuah in view of Altera teaches the limitations of claims 1 and 13.

Chuah in view of Altera does not expressly teach the steps of checking a sequence counter and inserting a dummy packet.

Armitage teaches the steps checking a sequence counter in said service header of each packet in said set of packets to determine packets are present sequentially (pg.129, left column, 1st paragraph); and inserting a dummy packet a packet is missing said set of packets (packing the cell; pg. 128, 4<sup>th</sup> paragraph, line 7).

The rationale for combining these references has been given above.

Claim 20 is rejected for similar rationale in the context of a “computer program product” as set forth in the rejection of claim 13.

Regarding claims 9 and 21, Armitage further teaches steps of: receiving an out of sequence packet (pg. 128, left and right columns, last and first paragraphs, respectively); and discarding said out of sequence packet (pg.127, “Label-Based Forwarding” 3<sup>rd</sup> paragraph “detection and discard of looping MPLS”).

Claim 21 is rejected for similar rationale in the context of a “computer program product” as set forth in the rejection of claim 13.

Regarding claim 10, Chuah in view of Altera teaches the limitations of claim 1.

Chuah in view of Altera does not expressly teach the steps of checking a sequence counter, terminating a current connection, discarding a set of packets, and establishing a new connection.

Armitage teaches the steps of: checking a sequence counter in said service header of each packet in said set of packets to determine packets are present sequentially (pg.129, left column, 1st paragraph; inherent to the SONET process); terminating a current connection if multiple packets are missing in said set of packets(inherent to the SONET process); discarding said set of packets (inherent to the SONET process); and establishing a new connection to begin receiving packets (pg. 128, left column, lines 1-19) .

The rationale for combining these references has been given above.

Regarding claim 11, Chuah in view of Altera teaches the limitations of claim 1.

Chuah in view of Altera does not expressly teach the steps of checking a sequence counter and establishing an in-frame condition.

Armitage teaches steps of: checking a sequence counter said service header of each packet in said set of packets to determine if all packets are present sequentially (pg.129, left column, 1st paragraph); and establishing an in-frame condition after said set packets are received in sequence (pg. 127, right column, 3<sup>rd</sup> paragraph).

The rationale for combining these references has been given above.

Regarding claim 12, Armitage further teaches the steps of: determining whether said in-frame condition is valid (pg.127, "Label-Based Forwarding" section, 3<sup>rd</sup> paragraph, lines 5-6 "scheduling disciplines"); and terminating a current connection if said in-frame condition is not valid (pg.127, "Label-Based Forwarding" section, 3<sup>rd</sup> paragraph, lines 5-6 "scheduling disciplines").

Regarding claim 18, Chuah in view of Altera teaches the limitations of claim 13.

Chuah in view of Altera does not expressly teach the components explicitly recited by claim 18.

Armitage teaches (a) logic code for storing a first set of frames into a data buffer; (b) logic code for calculating a first data average of said first set of frames said data buffer to obtain a threshold value (pg. 125, right column, 5th paragraph, “provisioning”); logic code for storing a next set of frames into said data buffer; (d) logic code for calculating a next data average of said next set of frames in said data buffer; logic code for comparing said next data average to said threshold value (pg. 125, right column, 5th paragraph, “provisioning”); said next data average is greater than said threshold value (pg. 125, right column, 5th paragraph, “provisioning”); logic code for generating a negative justification indicator (pg. 127, “Label-Based Forwarding” section, 2nd paragraph, “TTL reaches 0 “); and logic code for sending one more byte at said egress end (pg. 128, right column, “egress from the LSP tunnel, the top-level label is popped and the LSR then switches the remaining MPLS frame based on the new top label”); (g) said next data average is less than said threshold value (pg. 125, right column, 5th paragraph, “provisioning”); logic code for generating a positive justification indicator (pg. 127, “Label-Based Forwarding” section, 2nd paragraph, “the TTL is set to a finite value at the beginning of the LSP, decremented by one at every label switch”); and (2) logic code for sending one less byte at said egress end (pg. 128, right column, 2nd paragraph “ at the egress from the LSP tunnel, the top-level is popped” or removed); and (h) logic code for repeating said (c)-(g) (rejected based continuation, see *In re Dilnot*, 319 F.2d 188, 138 USPQ 248 (CCPA 1963)).

The rationale for combining these references has been given above.

Regarding claim 22, Chuah in view of Altera teaches the limitations of claim 13.

Chuah in view of Altera does not expressly teach the components explicitly recited by claim 22.

Armitage teaches checking a sequence counter in said service header of each packet in said set of packets to determine packets are present sequentially (pg.129, left column, 1st paragraph; inherent to the SONET process); establishing an in-frame condition after said set packets are received in sequence (pg. 128, right column, 2<sup>nd</sup> paragraph “at the egress level”); terminating a current connection if multiple packets are missing in said set of packets (inherent to the SONET process); discarding said set of packets (inherent to the SONET process); and establishing a new connection to begin receiving packets (pg. 128, left column, lines 1-19).

The rationale for combining these references has been given above.

Regarding claim 23, Armitage further teaches steps of: checking a sequence counter said service header of each packet in said set of packets to determine if all packets are present sequentially (pg.129, left column, 1st paragraph); and establishing an in-frame condition after said set packets are received in sequence (pg. 127, right column, 3<sup>rd</sup> paragraph).

Regarding claim 24, Armitage further teaches the steps of: determining whether said in-frame condition is valid (pg.127, “Label-Based Forwarding” section, 3<sup>rd</sup> paragraph, lines 5-6 “scheduling disciplines”); and terminating a current connection if said in-frame condition is not

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valid (pg.127, "Label-Based Forwarding" section, 3<sup>rd</sup> paragraph, lines 5-6 "scheduling disciplines").



***Conclusion***

New grounds of rejection have been entered in this Office Action. Accordingly, this action is NON-FINAL.

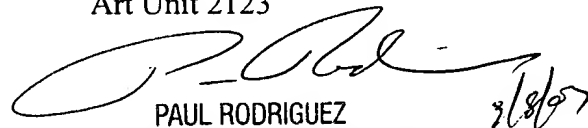
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached at (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jsp

Jason Proctor  
Examiner  
Art Unit 2123

  
PAUL RODRIGUEZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100